

WHAT IS CLAIMED IS:

1. A catheter assembly for delivering an endoprosthesis within a body lumen, comprising:

a catheter;

an expandable member;

an endoprosthesis disposed on the expandable member; and

5 a biocompatible material positioned on the endoprosthesis, wherein the biocompatible material is configured to prevent expansion of the endoprosthesis.

2. The catheter assembly of claim 1, wherein the endoprosthesis is a self-expanding stent, and the biocompatible material provides inward pressure on the self-expanding stent to prevent expansion of the self-expanding stent.

3. The catheter assembly of claim 1, wherein the biocompatible material comprises a sheath that surrounds at least a portion of the endoprosthesis.

4. The catheter assembly of claim 3, wherein the sheath has a length less than a length of the stent, the stent has a distal end and a proximal end, and the sheath is positioned on the stent so that the sheath does not overlie the distal end or proximal end of the stent.

5. The catheter assembly of claim 1, wherein the biocompatible material comprises a filament that is wrapped around at least a portion of the endoprosthesis.

6. The catheter assembly of claim 5, wherein the stent has an open-lattice configuration with open areas, and the filament is threaded through one or more of the open areas of the stent.

7. The catheter assembly of claim 5, wherein the filament is heat bonded to the stent.

8. The catheter assembly of claim 1, wherein the biocompatible material comprises a coating on the stent.

9. The catheter assembly of claim 8, wherein the stent has an outer surface, and the biocompatible coating is positioned on the outer surface of the stent.

10. The catheter assembly of claim 8, wherein the stent has an inner surface, and the biocompatible coating is positioned on the inner surface of the stent.

11. The catheter assembly of claim 1, wherein the stent has open areas, and the biocompatible material is positioned within one or more of said open areas of the stent.

12. An endoprosthesis for deployment in a body lumen, comprising:
  - a stent; and
  - a biocompatible material positioned on the endoprosthesis, wherein the biocompatible material is configured to prevent expansion of the endoprosthesis.
13. The endoprosthesis of claim 12, wherein the stent is a self-expanding stent.
14. The endoprosthesis of claim 13, wherein the stent comprises one or more open areas, and the biocompatible material is positioned within one or more of the open areas.
15. The endoprosthesis of claim 12, wherein the biocompatible material comprises a sheath positioned to surround at least a portion of the stent.
16. The endoprosthesis of claim 12, wherein the biocompatible material comprises a filament wrapped around the stent.
17. The endoprosthesis of claim 16, wherein the filament is heat-bonded to the stent.
18. The endoprosthesis of claim 12, wherein the stent has one or more open areas, and the biocompatible material comprises a filament threaded through one or more of the open areas of the stent.

**19.** A method of delivering an endoprosthesis into a desired location within a body lumen, the method comprising:

providing a catheter assembly including a catheter, an expandable member, an endoprosthesis disposed on the expandable member, and a biocompatible material positioned on the endoprosthesis, wherein the biocompatible material is configured to prevent expansion of the endoprosthesis but also to fail under sufficient pressure;

advancing the catheter, the expandable member, and the endoprosthesis through the body lumen;

positioning the expandable member and endoprosthesis at a desired location;

deploying the endoprosthesis and biocompatible material at the desired location, including the step of expanding the expandable member so as to cause the biocompatible material to fail and the endoprosthesis to expand;

contracting the expandable member;

withdrawing the catheter, the expandable member, and the sheath from the body lumen; and

leaving the endoprosthesis and biocompatible material at the desired location within the body lumen.